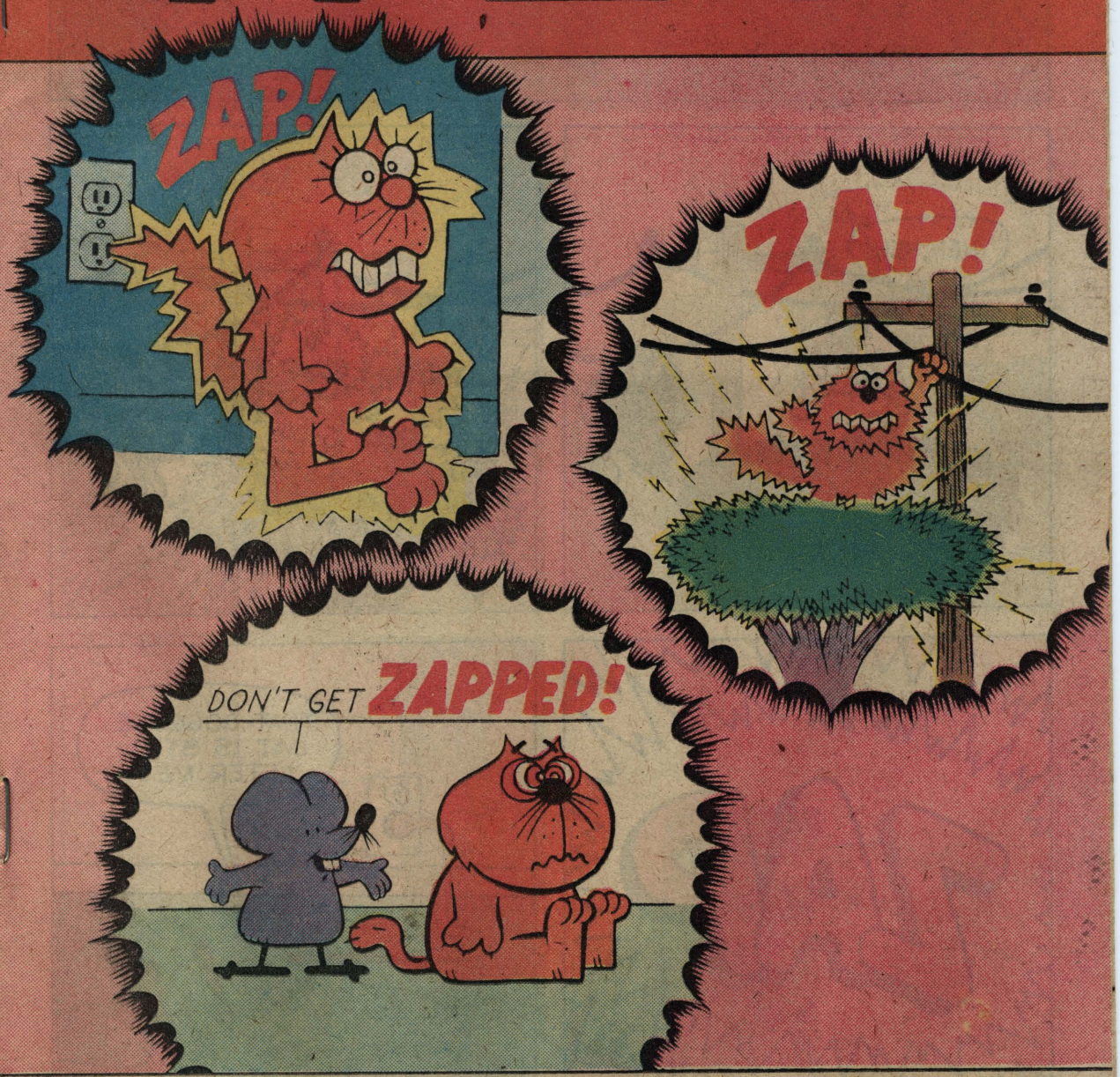
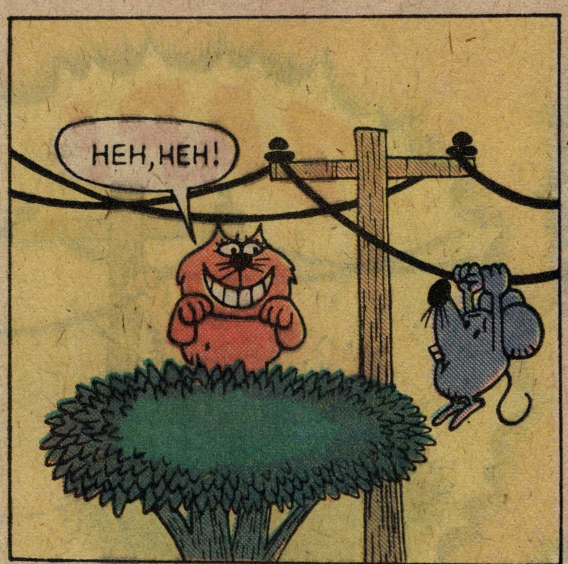
ELECTRIC SAFETY, FROM A TO ZAP!

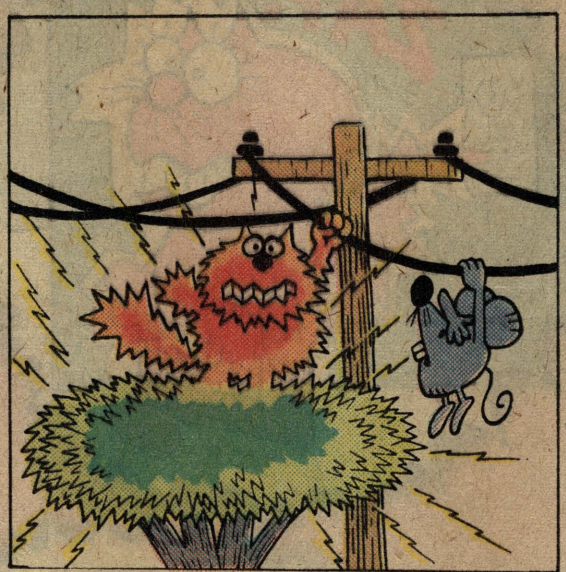


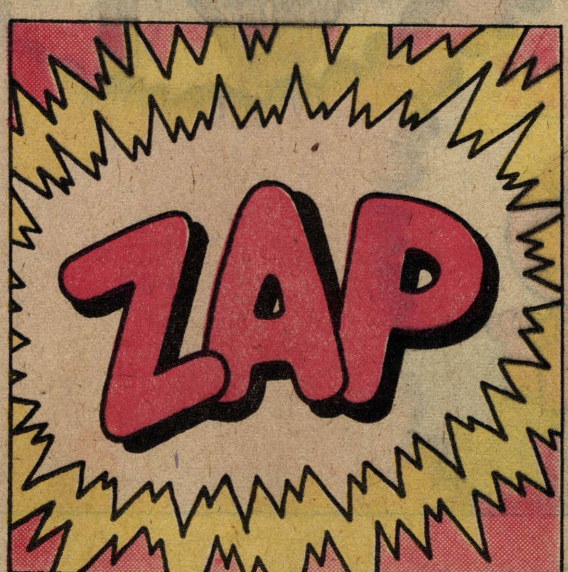
A Public Service of

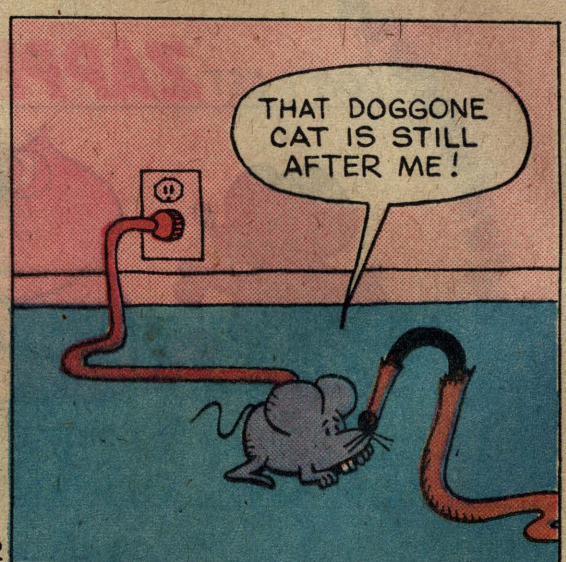
PHILADELPHIA ELECTRIC COMPANY

In the interest of promoting Electrical Safety









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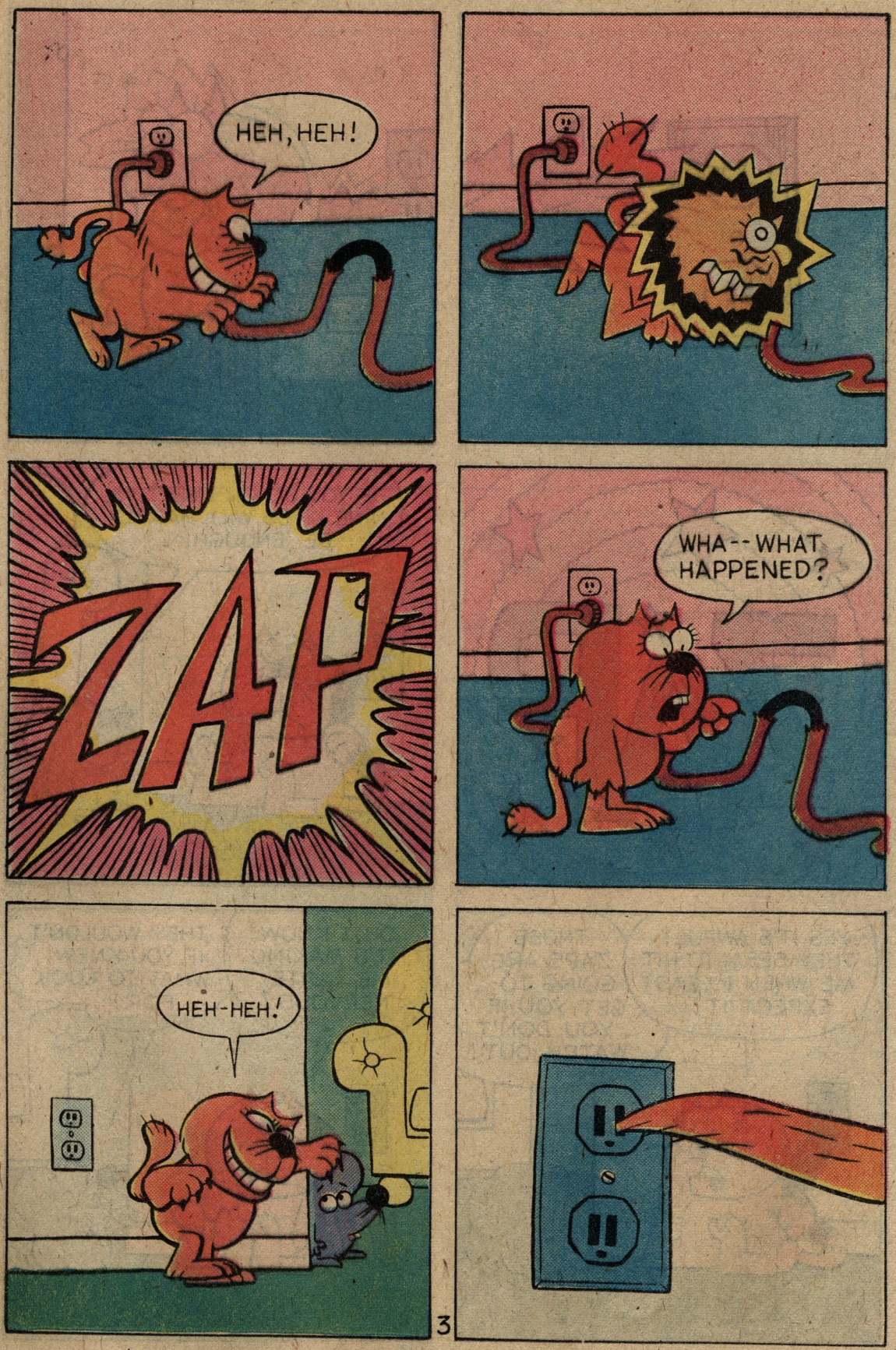
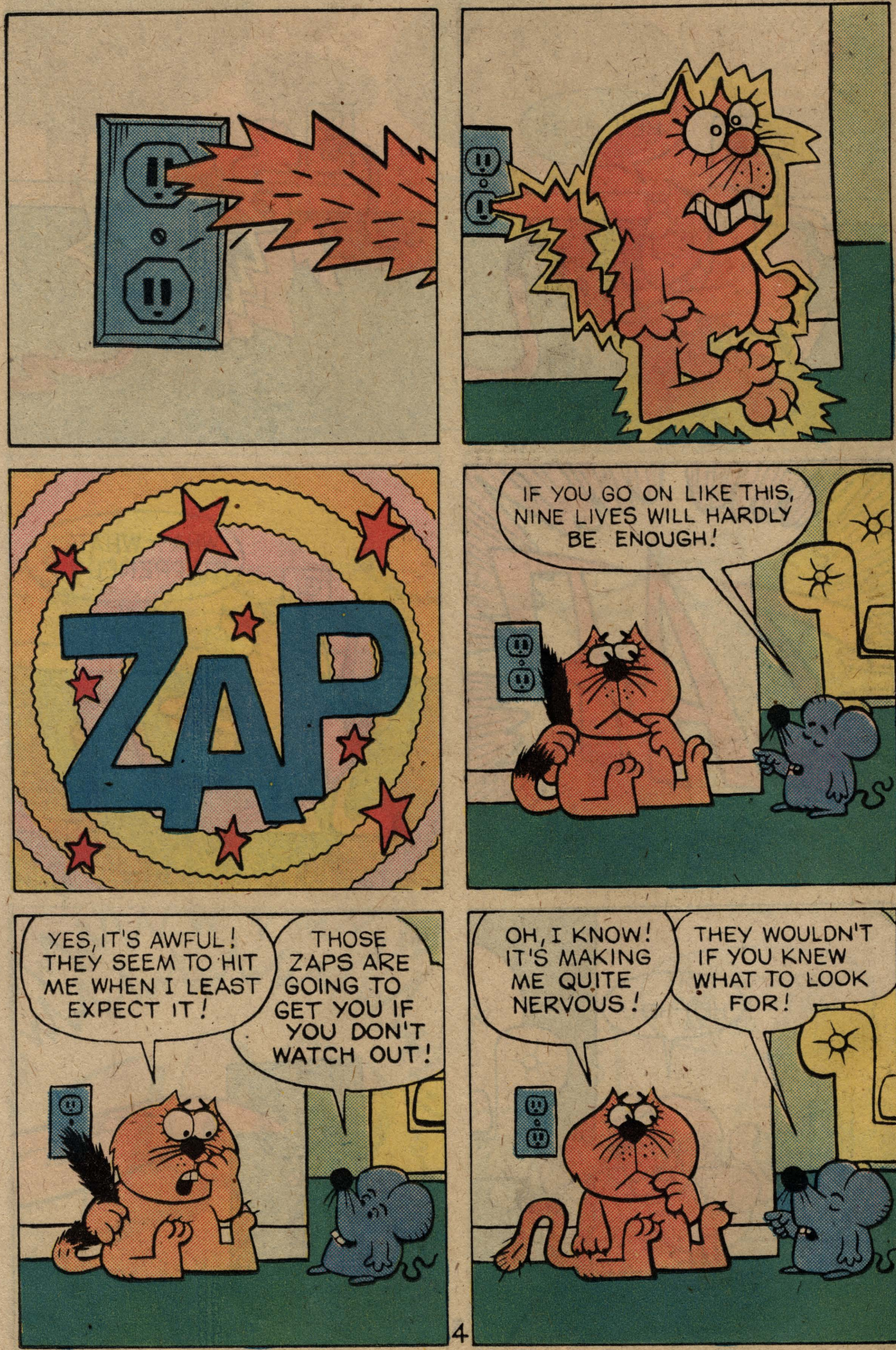
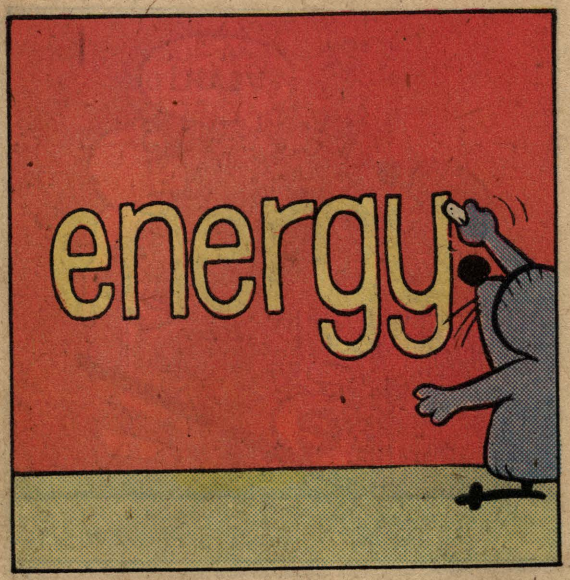
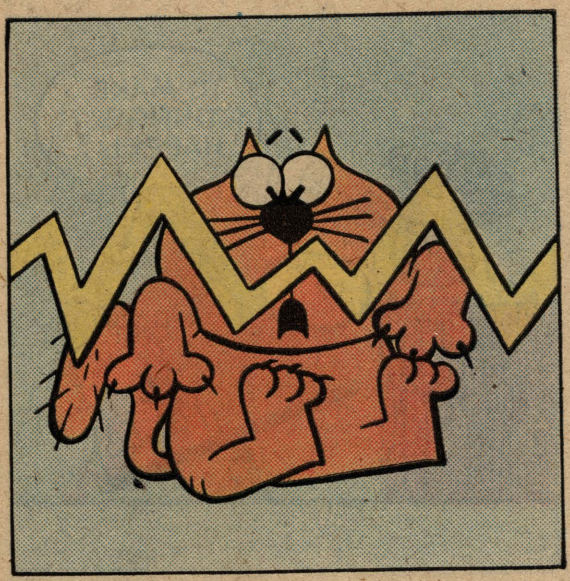
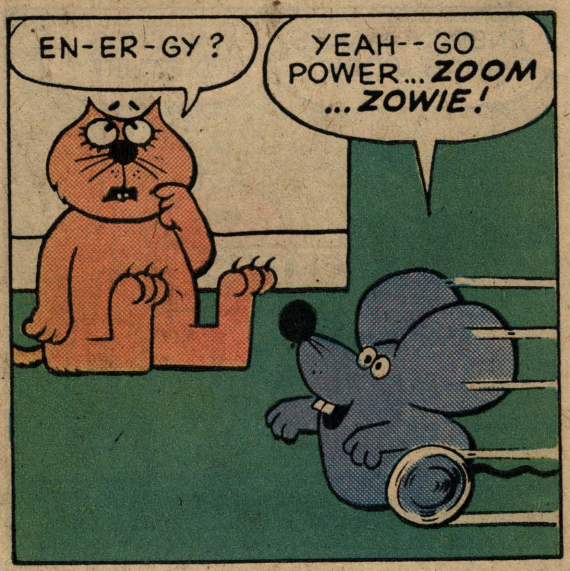
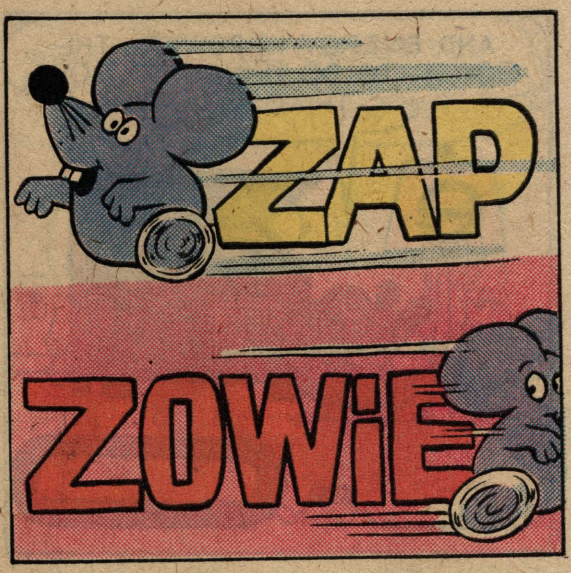

HEH, HEH!
ZAP
WHA--WHAT HAPPENED?
HEH-HEH!


ZAP
IF YOU GO ON LIKE THIS, NINE LIVES WILL HARDLY BE ENOUGH!
YES, IT'S AWFUL! THEY SEEM TO HIT ME WHEN I LEAST EXPECT IT!
THOSE ZAPS ARE GOING TO GET YOU IF YOU DON'T WATCH OUT!
OH, I KNOW! IT'S MAKING ME QUITE NERVOUS!
THEY WOULDN'T IF YOU KNEW WHAT TO LOOK FOR!

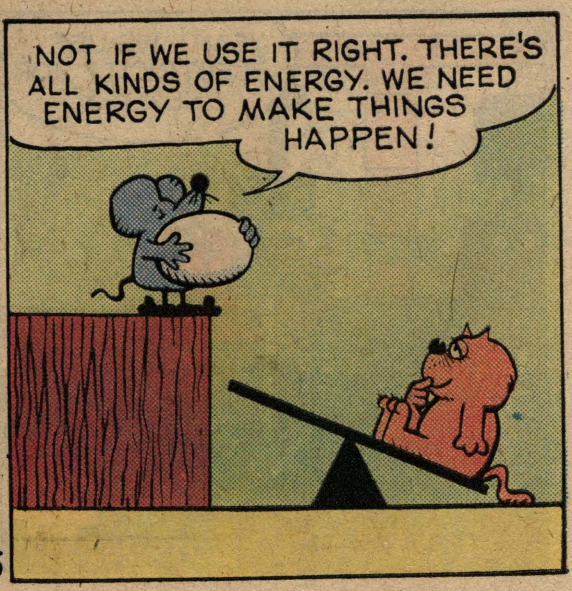

energy

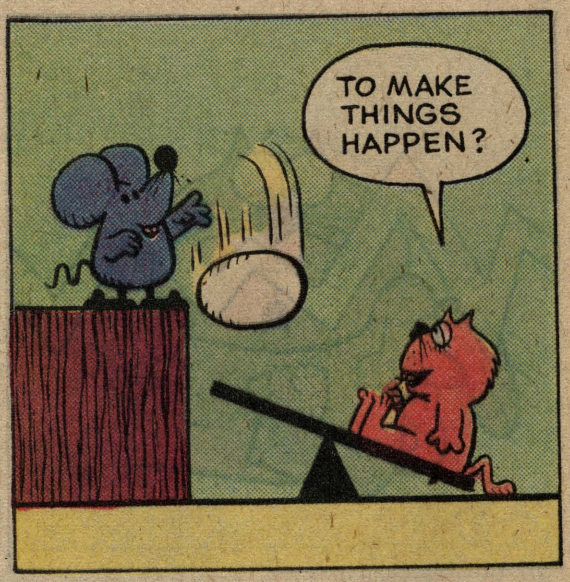


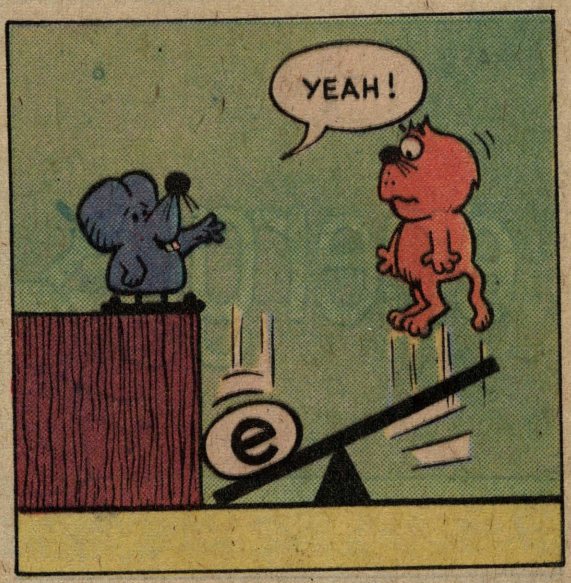

EN-ER-GY?
YEAH--GO POWER... ZOOM ...ZOWIE!

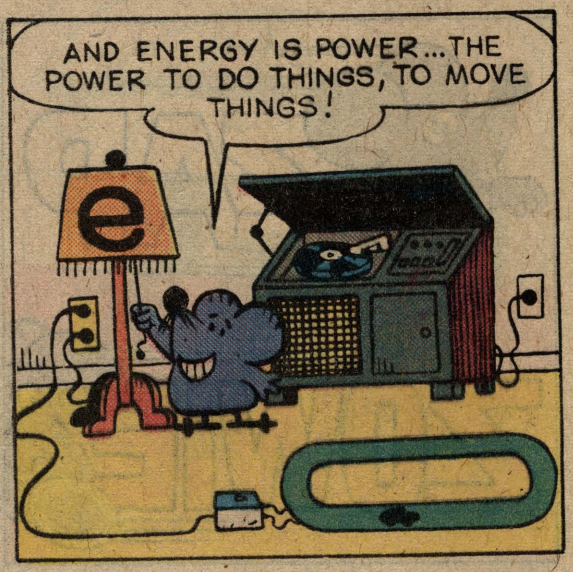

ZAP
ZOWIE

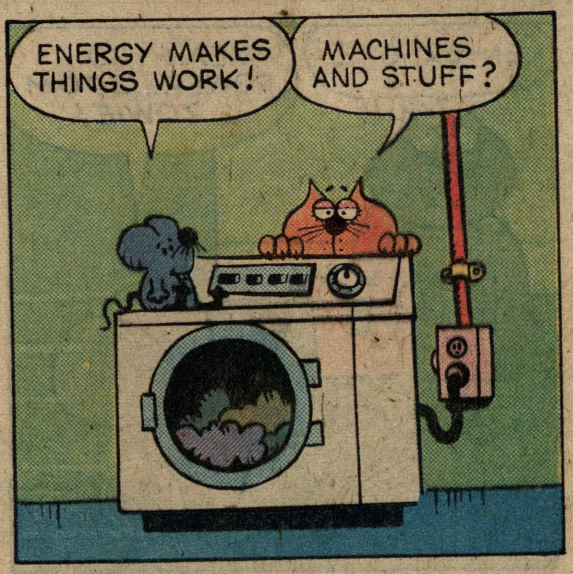
MERCY--HOW AWFUL! SOMEONE COULD GET HURT!

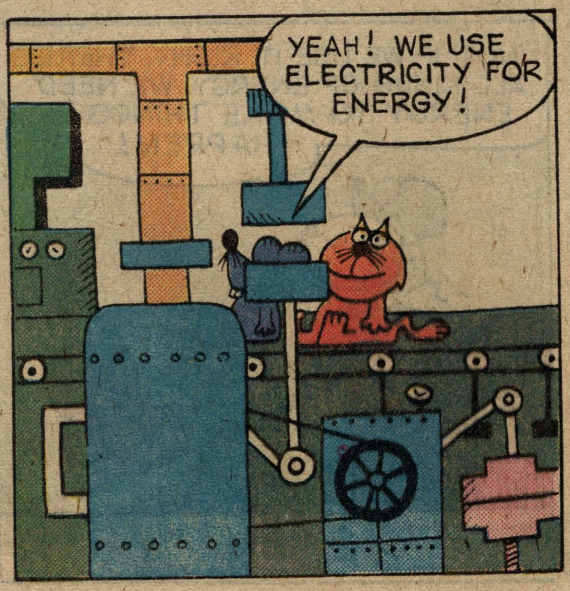

NOT IF WE USE IT RIGHT. THERE'S ALL KINDS OF ENERGY. WE NEED ENERGY TO MAKE THINGS HAPPEN!

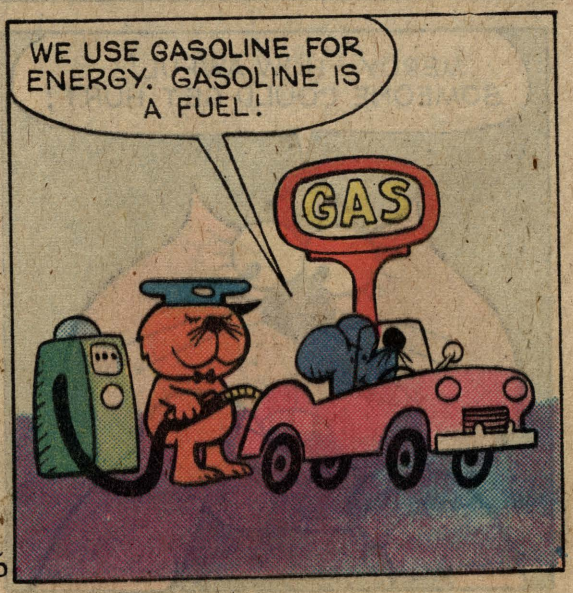

TO MAKE THINGS HAPPEN?

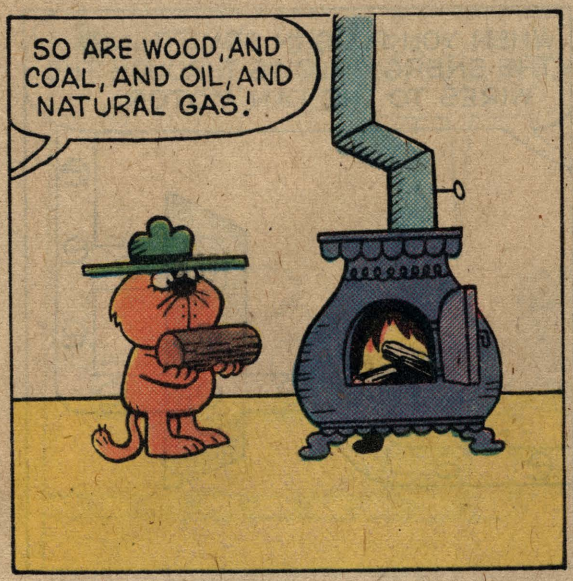

YEAH!

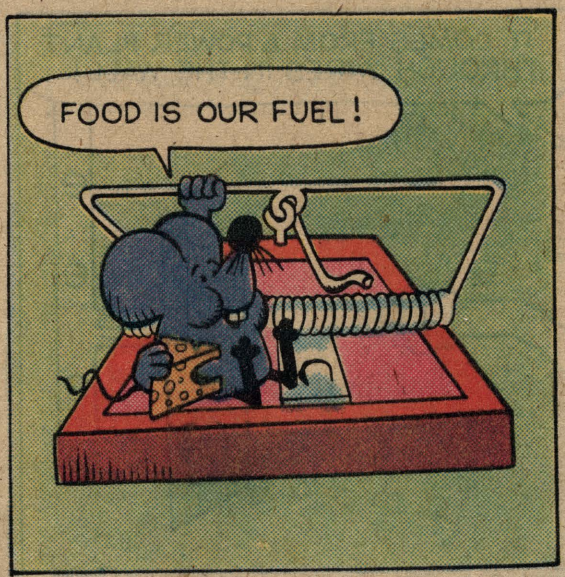

AND ENERGY IS POWER...THE POWER TO DO THINGS, TO MOVE THINGS!

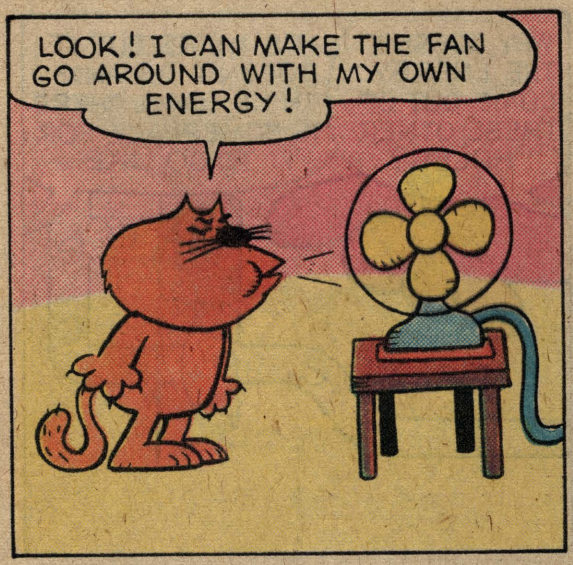

ENERGY MAKES THINGS WORK!
MACHINES AND STUFF?

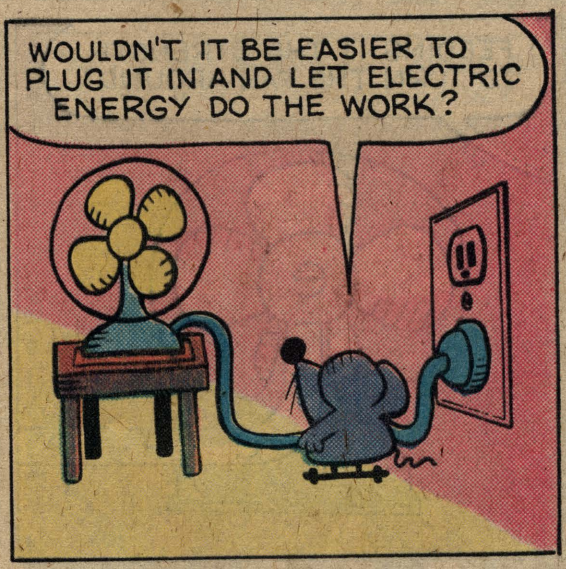

YEAH! WE USE ELECTRICITY FOR ENERGY!

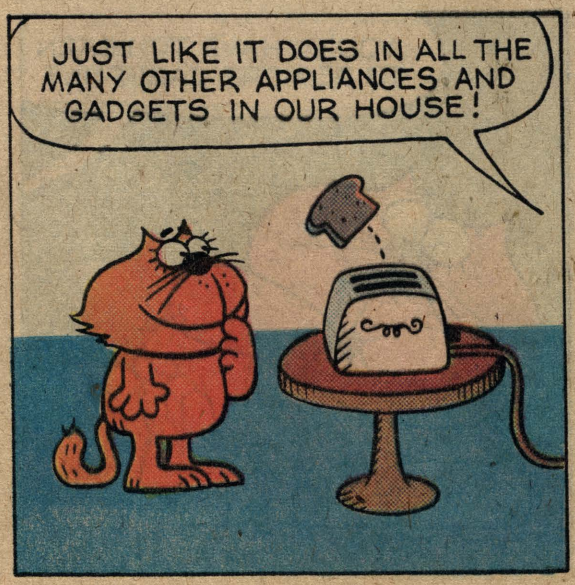

WE USE GASOLINE FOR ENERGY. GASOLINE IS A FUEL!
GAS

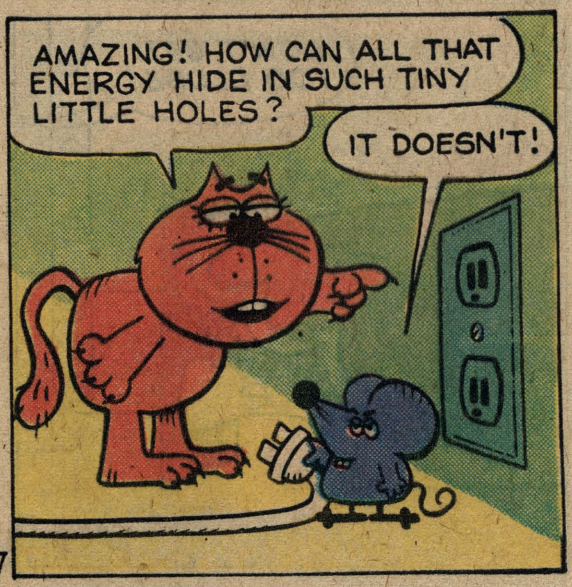

SO ARE WOOD, AND COAL, AND OIL, AND NATURAL GAS!

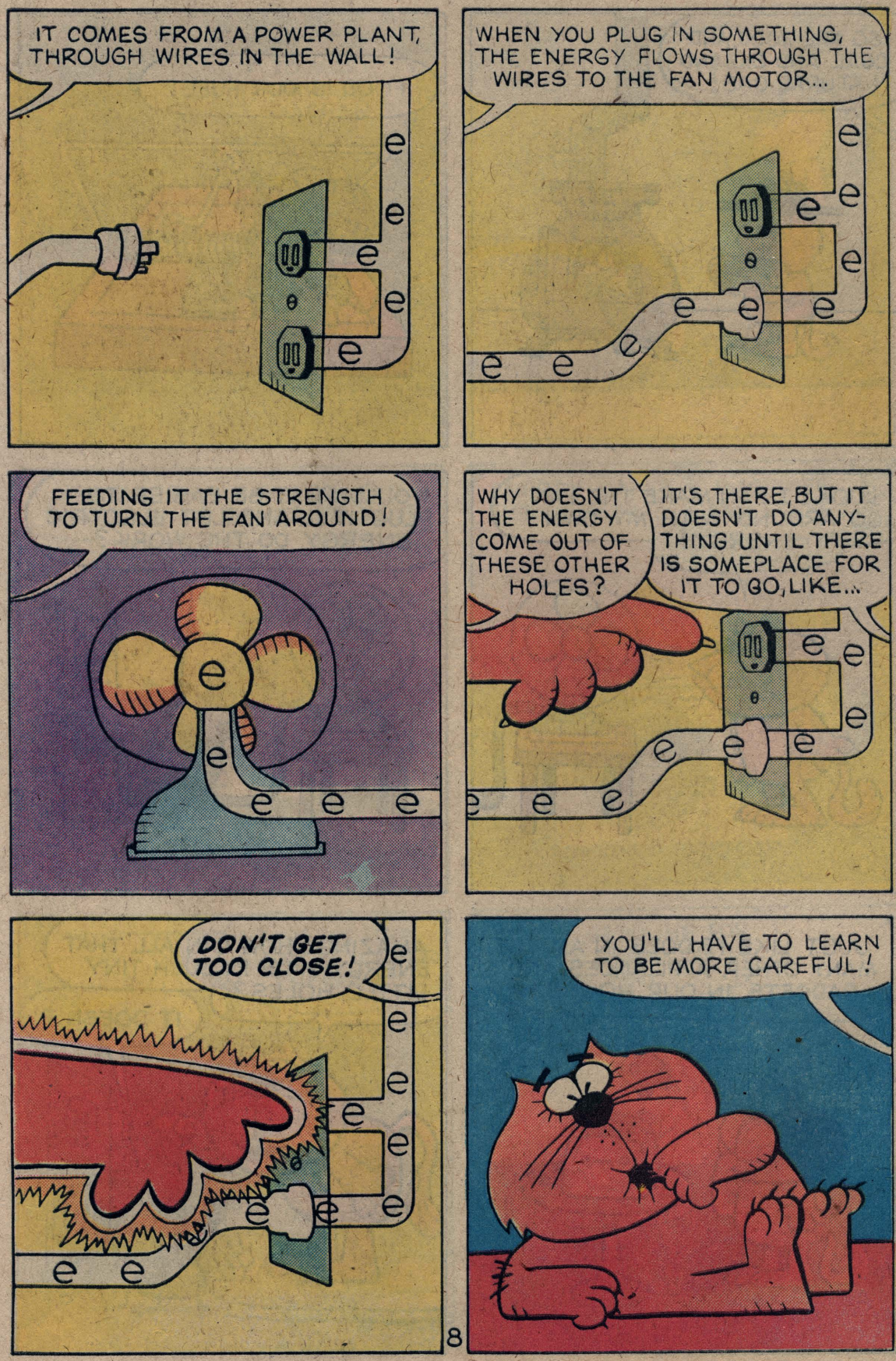

FOOD IS OUR FUEL!

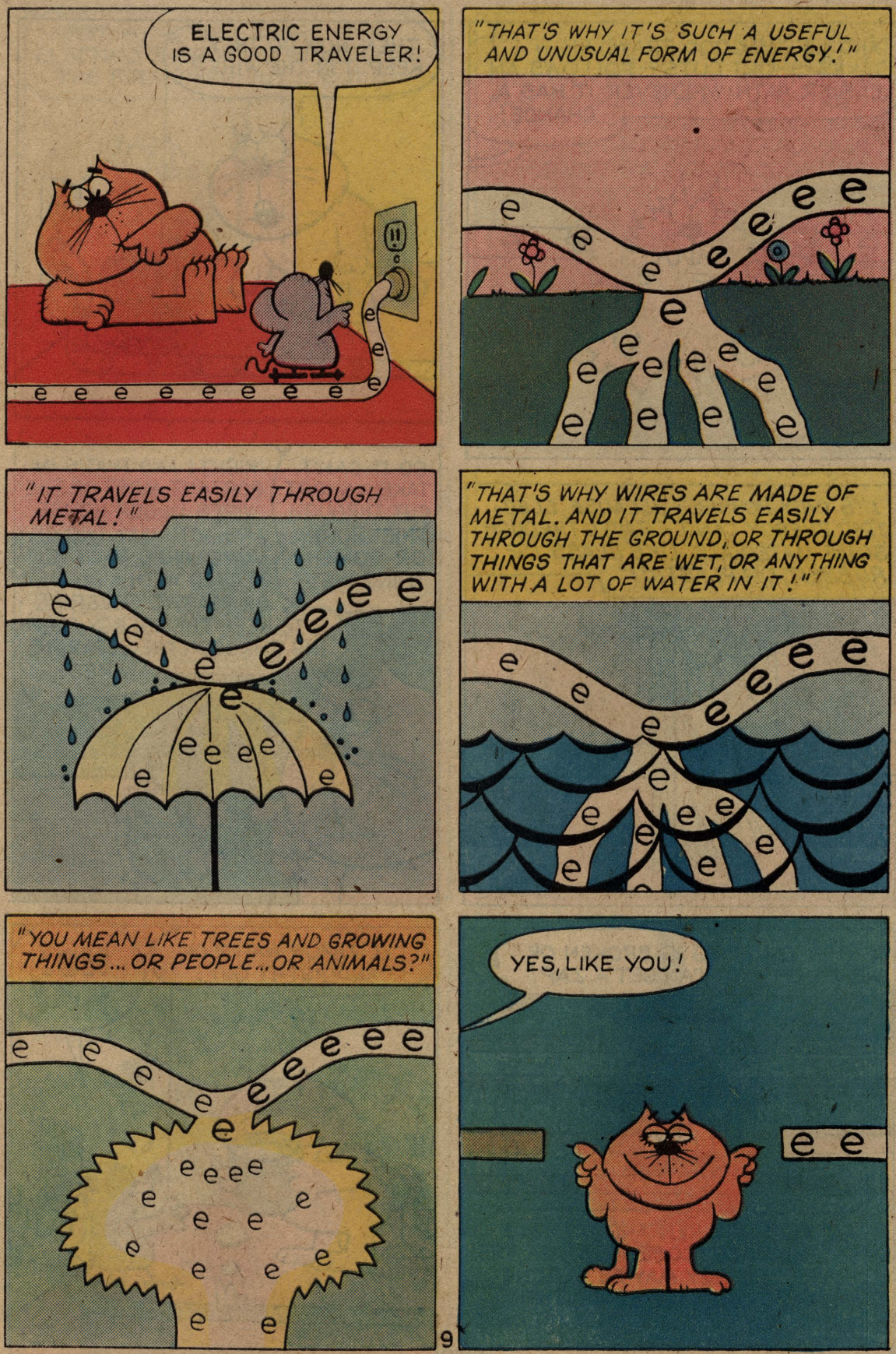

LOOK! I CAN MAKE THE FAN GO AROUND WITH MY OWN ENERGY!

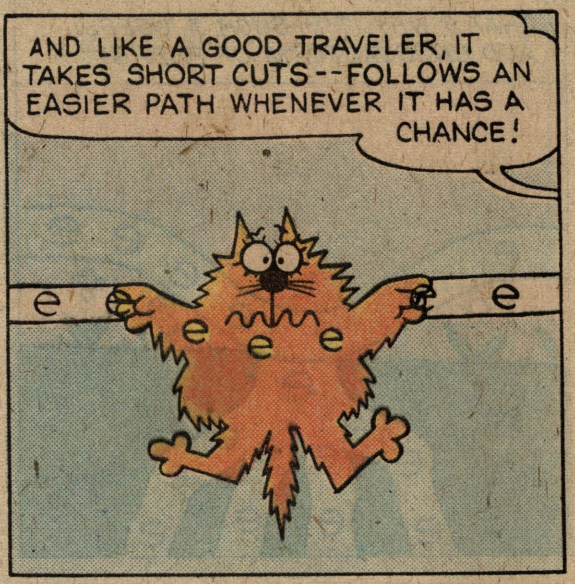

WOULDN'T IT BE EASIER TO PLUG IT IN AND LET ELECTRIC ENERGY DO THE WORK?

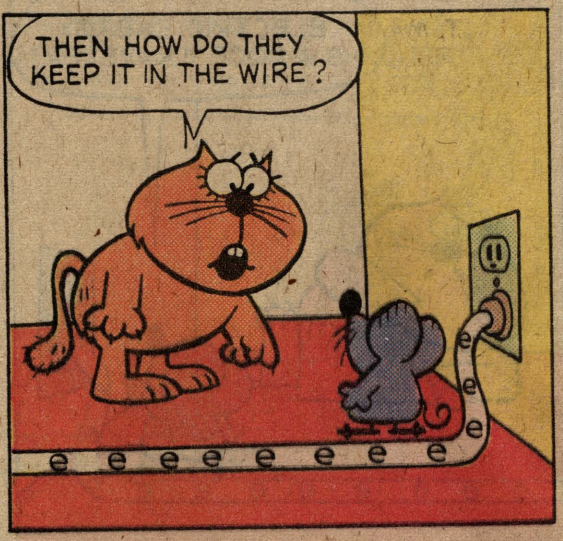

JUST LIKE IT DOES IN ALL THE MANY OTHER APPLIANCES AND GADGETS IN OUR HOUSE!

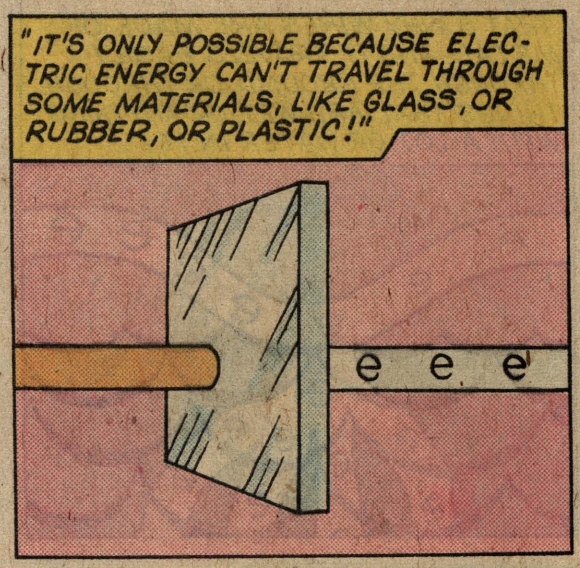

AMAZING! HOW CAN ALL THAT ENERGY HIDE IN SUCH TINY LITTLE HOLES?
IT DOESN'T!


IT COMES FROM A POWER PLANT, THROUGH WIRES IN THE WALL!
WHEN YOU PLUG IN SOMETHING, THE ENERGY FLOWS THROUGH THE WIRES TO THE FAN MOTOR...
FEEDING IT THE STRENGTH TO TURN THE FAN AROUND!
WHY DOESN'T THE ENERGY COME OUT OF THESE OTHER HOLES?
IT'S THERE, BUT IT DOESN'T DO ANY-THING UNTIL THERE IS SOMEPLACE FOR IT TO GO, LIKE...
DON'T GET TOO CLOSE!
YOU'LL HAVE TO LEARN TO BE MORE CAREFUL!

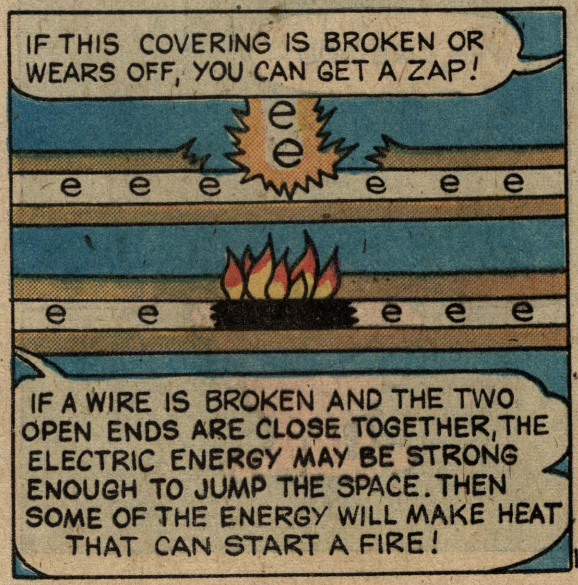

ELECTRIC ENERGY IS A GOOD TRAVELER!
"THAT'S WHY IT'S SUCH A USEFUL AND UNUSUAL FORM OF ENERGY!"
"IT TRAVELS EASILY THROUGH METAL!"
"THAT'S WHY WIRES ARE MADE OF METAL. AND IT TRAVELS EASILY THROUGH THE GROUND, OR THROUGH THINGS THAT ARE WET, OR ANYTHING WITH A LOT OF WATER IN IT!"
"YOU MEAN LIKE TREES AND GROWING THINGS... OR PEOPLE... OR ANIMALS?"
YES, LIKE YOU!


AND LIKE A GOOD TRAVELER, IT TAKES SHORT CUTS--FOLLOWS AN EASIER PATH WHENEVER IT HAS A CHANCE!


THEN HOW DO THEY KEEP IT IN THE WIRE?

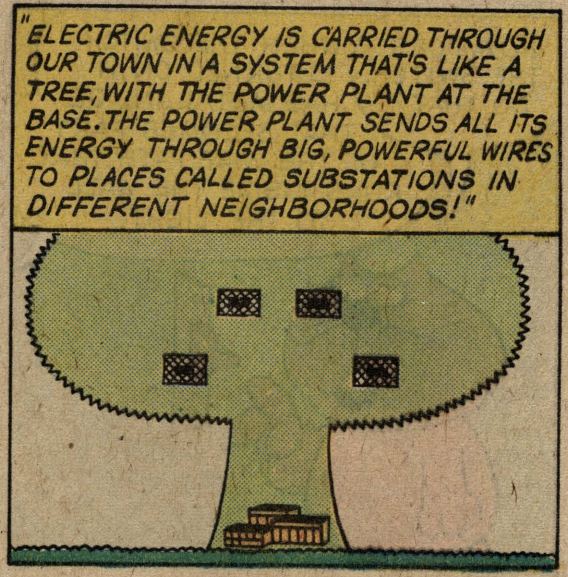

"IT'S ONLY POSSIBLE BECAUSE ELECTRIC ENERGY CAN'T TRAVEL THROUGH SOME MATERIALS, LIKE GLASS, OR RUBBER, OR PLASTIC!"

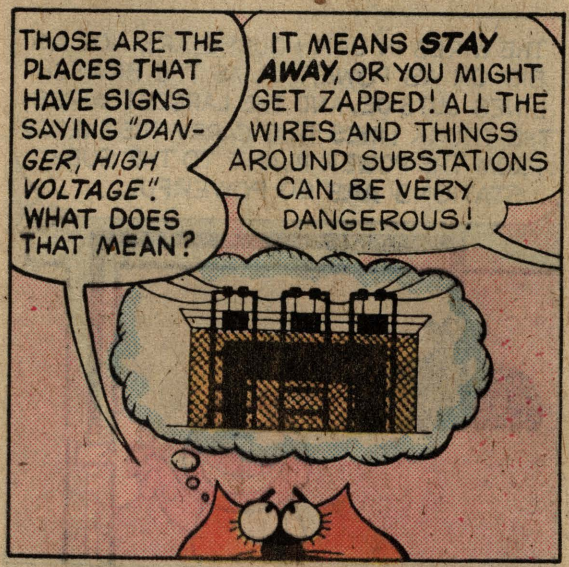
SO IT CAN'T TAKE A SHORT CUT THROUGH THE GROUND OR SOMETHING WET?
RIGHT! AND THAT'S IMPORTANT. MOST OF THE WIRES IN OUR HOUSE ARE ACTUALLY TWO OR MORE WIRES, EACH PROTECTED WITH A RUBBER OR PLASTIC COVERING TO KEEP THE ENERGY FLOWING THROUGH THE SEPARATE WIRES!

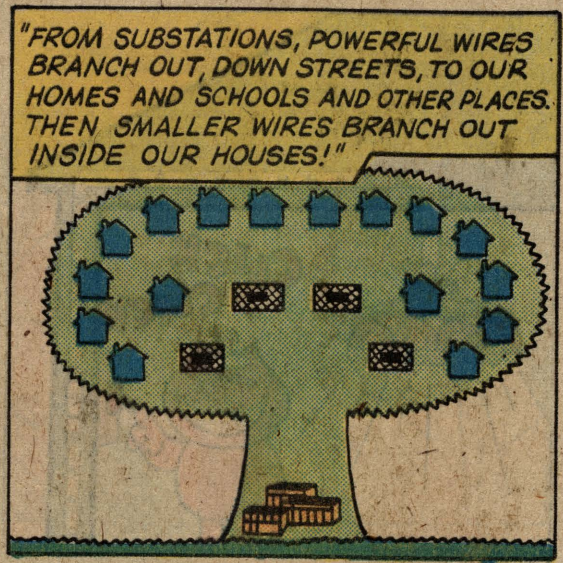

IF THIS COVERING IS BROKEN OR WEARS OFF, YOU CAN GET A ZAP!
IF A WIRE IS BROKEN AND THE TWO OPEN ENDS ARE CLOSE TOGETHER, THE ELECTRIC ENERGY MAY BE STRONG ENOUGH TO JUMP THE SPACE. THEN SOME OF THE ENERGY WILL MAKE HEAT THAT CAN START A FIRE!

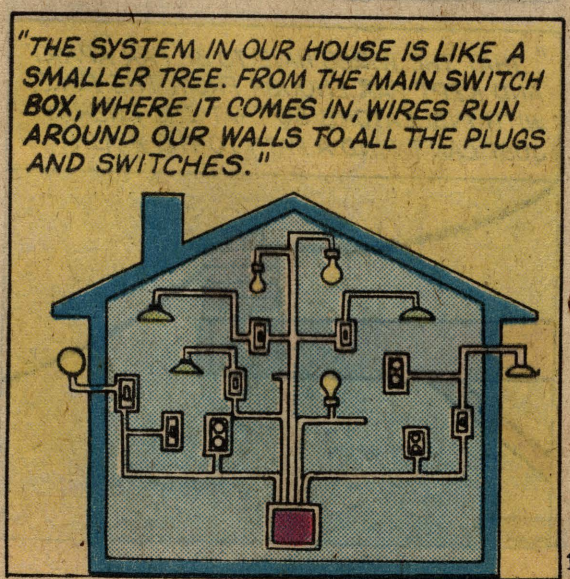
I'LL THROW WATER ON IT AND PUT IT OUT!
NO! NO!

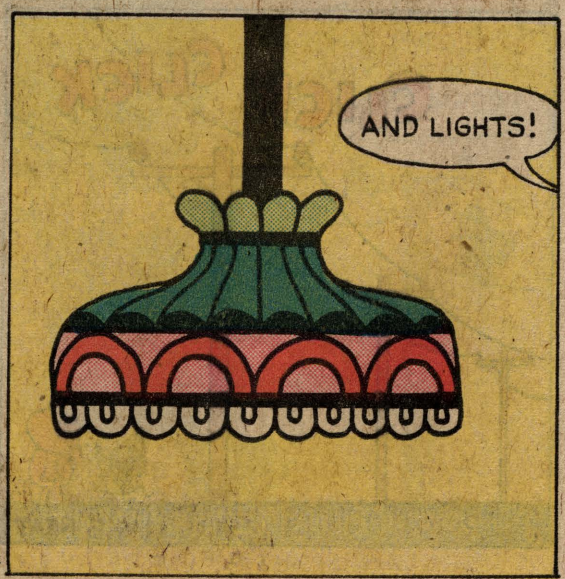
FIRST, MAKE SURE THERE IS NO ELECTRIC ENERGY FLOWING NEAR THE FIRE! THEN PUT IT OUT!

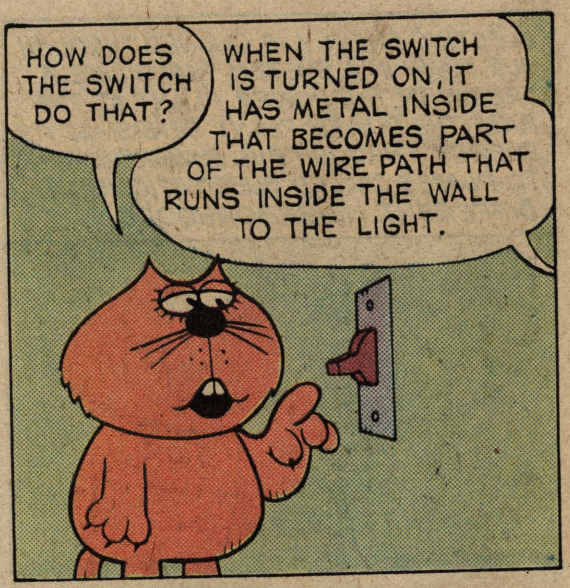

"ELECTRIC ENERGY IS CARRIED THROUGH OUR TOWN IN A SYSTEM THAT'S LIKE A TREE, WITH THE POWER PLANT AT THE BASE. THE POWER PLANT SENDS ALL ITS ENERGY THROUGH BIG, POWERFUL WIRES TO PLACES CALLED SUBSTATIONS IN DIFFERENT NEIGHBORHOODS!"

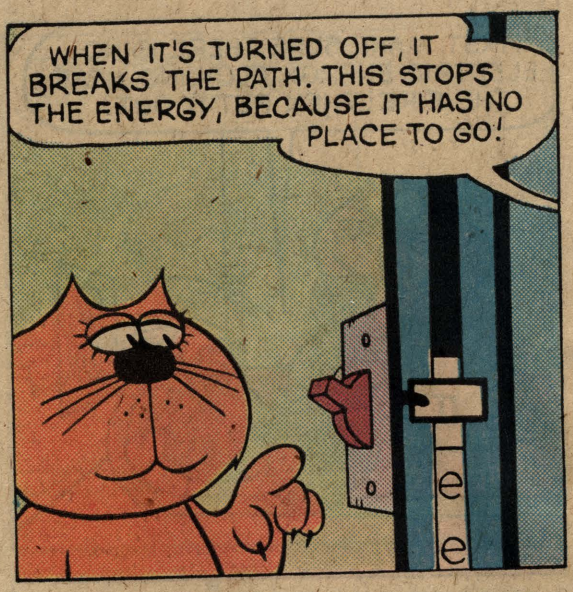

THOSE ARE THE PLACES THAT HAVE SIGNS SAYING "DANGER, HIGH VOLTAGE". WHAT DOES THAT MEAN?
IT MEANS **STAY AWAY**, OR YOU MIGHT GET ZAPPED! ALL THE WIRES AND THINGS AROUND SUBSTATIONS CAN BE VERY DANGEROUS!

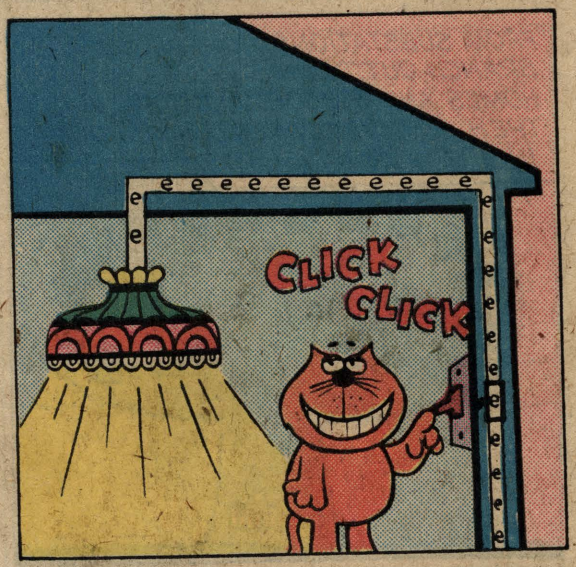

"FROM SUBSTATIONS, POWERFUL WIRES BRANCH OUT, DOWN STREETS, TO OUR HOMES AND SCHOOLS AND OTHER PLACES. THEN SMALLER WIRES BRANCH OUT INSIDE OUR HOUSES!"

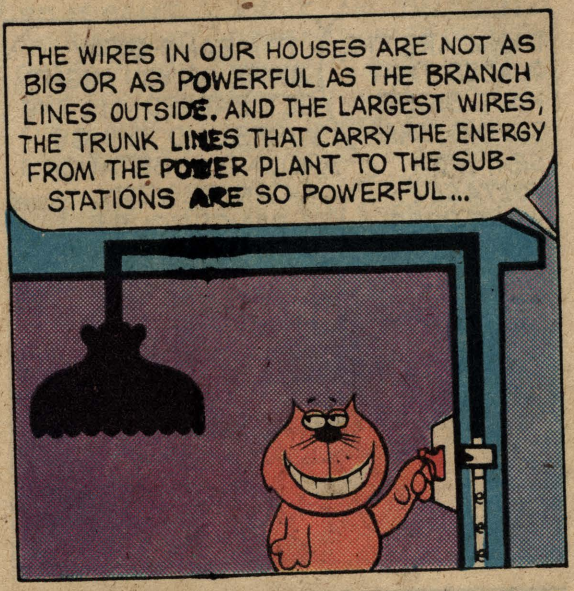

"THE SYSTEM IN OUR HOUSE IS LIKE A SMALLER TREE. FROM THE MAIN SWITCH BOX, WHERE IT COMES IN, WIRES RUN AROUND OUR WALLS TO ALL THE PLUGS AND SWITCHES."

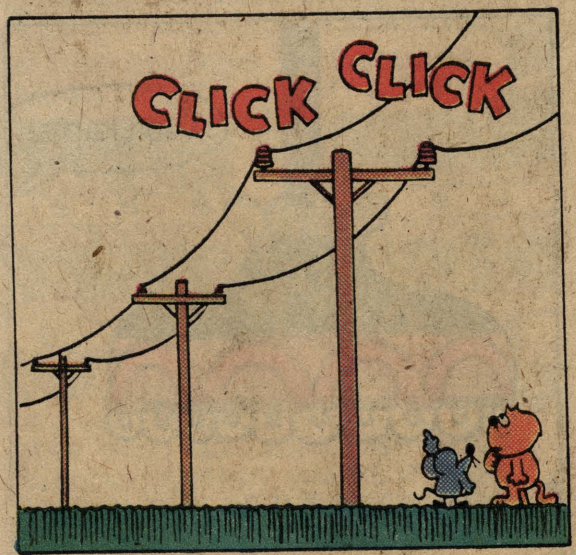

AND LIGHTS!

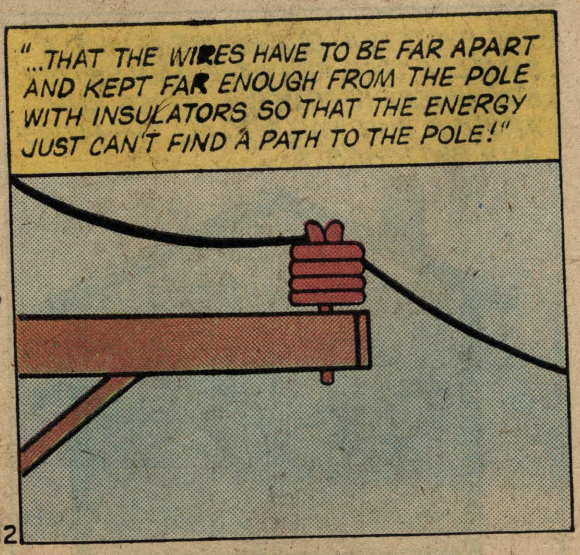

HOW DOES THE SWITCH DO THAT?
WHEN THE SWITCH IS TURNED ON, IT HAS METAL INSIDE THAT BECOMES PART OF THE WIRE PATH THAT RUNS INSIDE THE WALL TO THE LIGHT.

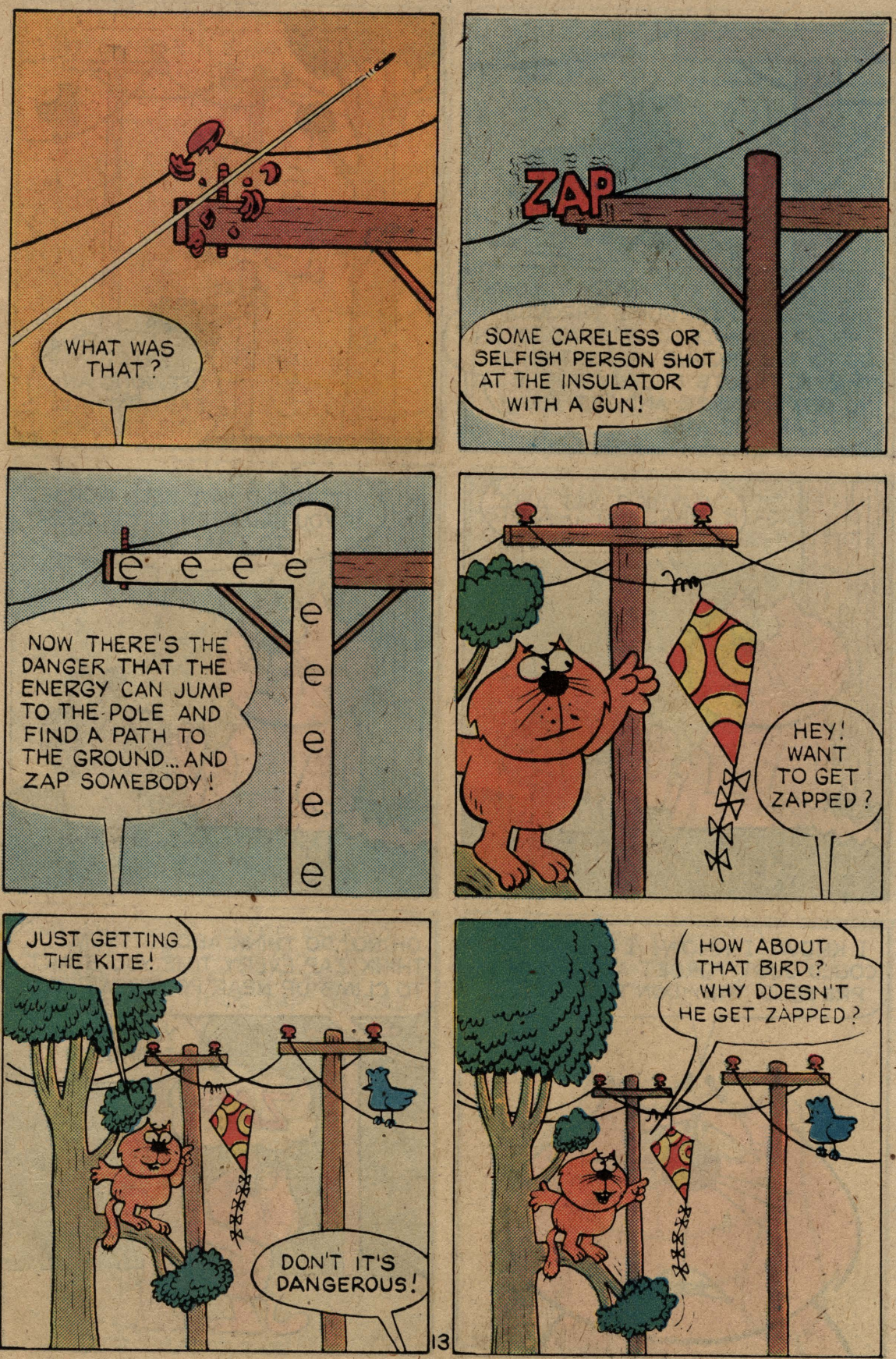

WHEN IT'S TURNED OFF, IT BREAKS THE PATH. THIS STOPS THE ENERGY, BECAUSE IT HAS NO PLACE TO GO!

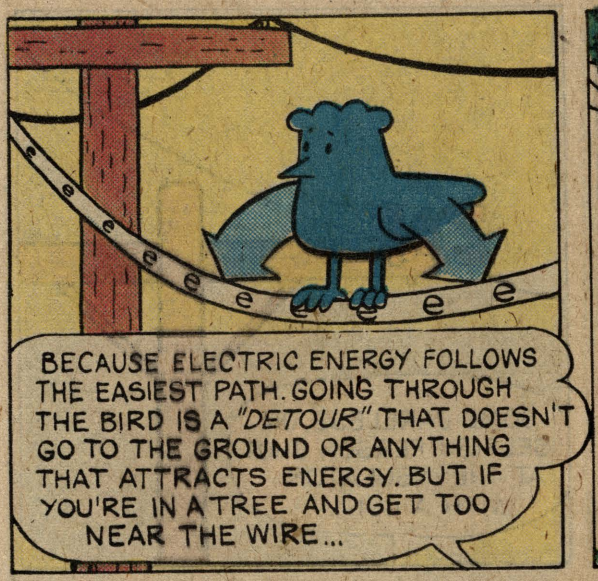

CLICK CLICK

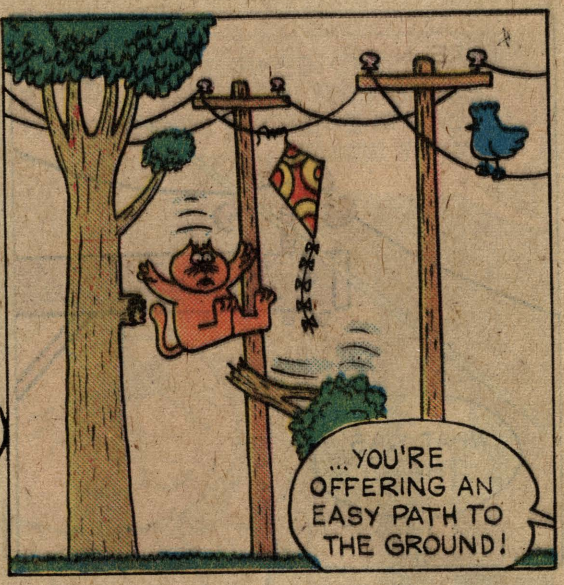

THE WIRES IN OUR HOUSES ARE NOT AS BIG OR AS POWERFUL AS THE BRANCH LINES OUTSIDE. AND THE LARGEST WIRES, THE TRUNK LINES THAT CARRY THE ENERGY FROM THE POWER PLANT TO THE SUB-STATIONS ARE SO POWERFUL...


CLICK CLICK


"...THAT THE WIRES HAVE TO BE FAR APART AND KEPT FAR ENOUGH FROM THE POLE WITH INSULATORS SO THAT THE ENERGY JUST CAN'T FIND A PATH TO THE POLE!"

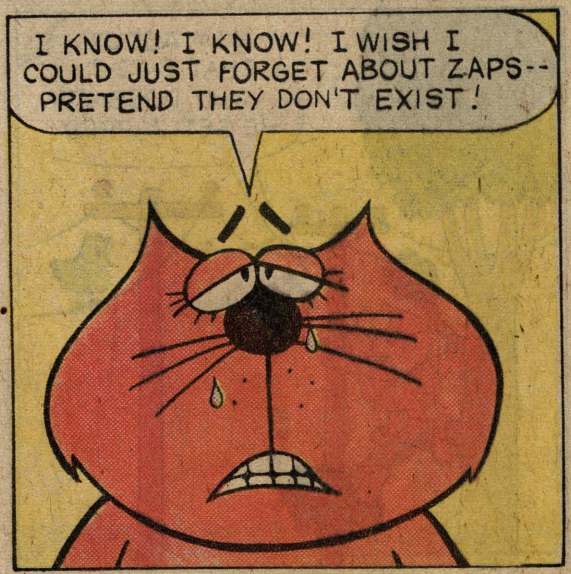

WHAT WAS THAT?
ZAP
SOME CARELESS OR SELFISH PERSON SHOT AT THE INSULATOR WITH A GUN!
NOW THERE'S THE DANGER THAT THE ENERGY CAN JUMP TO THE POLE AND FIND A PATH TO THE GROUND... AND ZAP SOMEBODY!
eeeeeeeeeeeee
HEY! WANT TO GET ZAPPED?
JUST GETTING THE KITE!
DON'T IT'S DANGEROUS!
HOW ABOUT THAT BIRD? WHY DOESN'T HE GET ZAPPED?

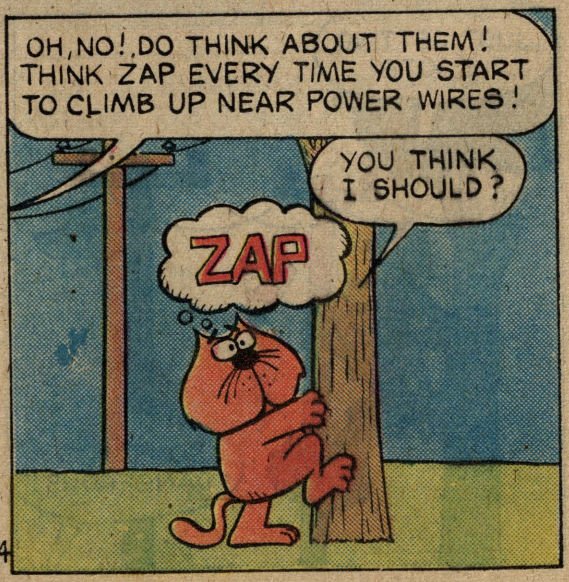

BECAUSE ELECTRIC ENERGY FOLLOWS THE EASIEST PATH. GOING THROUGH THE BIRD IS A "DETOUR" THAT DOESN'T GO TO THE GROUND OR ANYTHING THAT ATTRACTS ENERGY. BUT IF YOU'RE IN A TREE AND GET TOO NEAR THE WIRE...

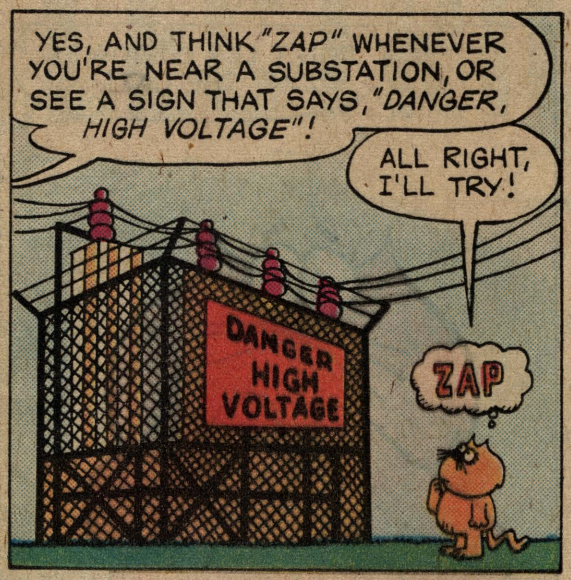

...YOU'RE OFFERING AN EASY PATH TO THE GROUND!

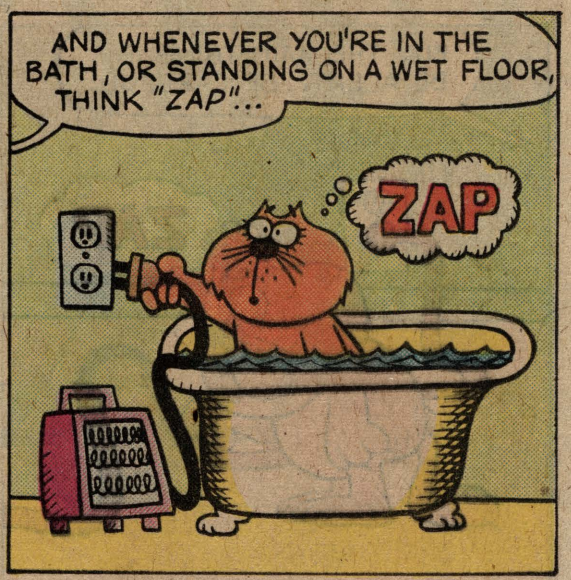
MAYBE I WAS JUST BORN UNLUCKY!

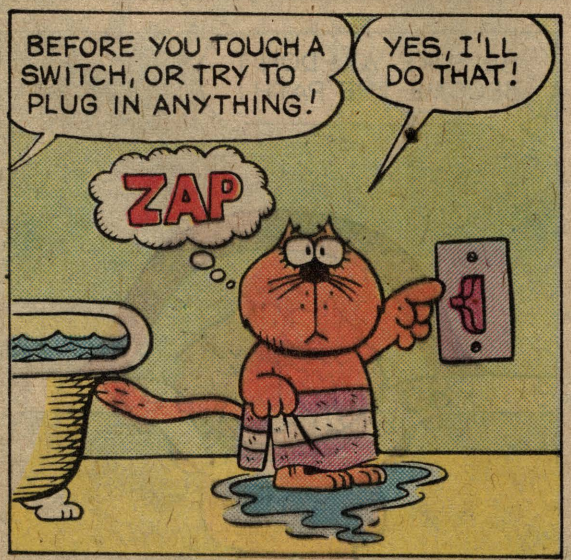
IT WOULD HAVE BEEN WORSE IF YOU HAD BEEN ANY CLOSER TO THAT WIRE!

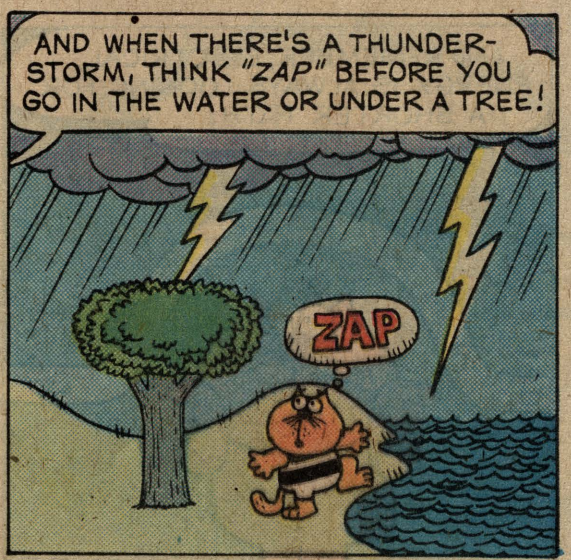

I KNOW! I KNOW! I WISH I COULD JUST FORGET ABOUT ZAPS-- PRETEND THEY DON'T EXIST!

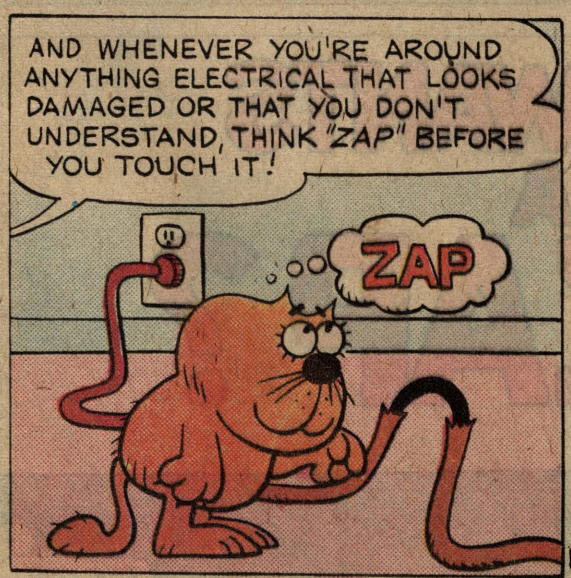

OH, NO!. DO THINK ABOUT THEM! THINK ZAP EVERY TIME YOU START TO CLIMB UP NEAR POWER WIRES!
YOU THINK I SHOULD?
ZAP


YES, AND THINK "ZAP" WHENEVER YOU'RE NEAR A SUBSTATION, OR SEE A SIGN THAT SAYS, "DANGER, HIGH VOLTAGE"!
ALL RIGHT, I'LL TRY!
DANGER HIGH VOLTAGE
ZAP

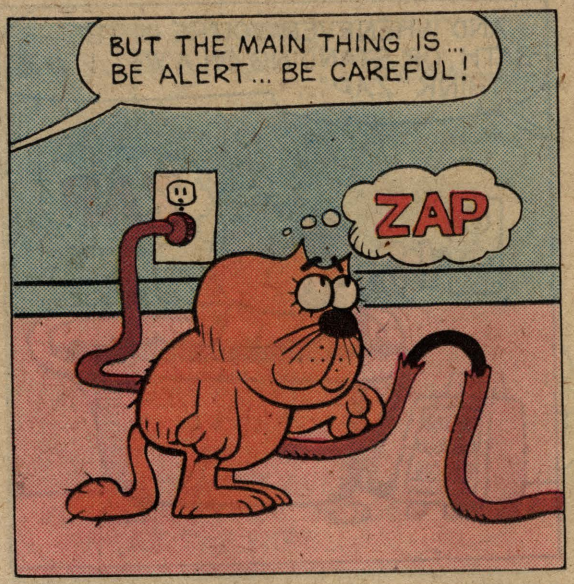

AND WHENEVER YOU'RE IN THE BATH, OR STANDING ON A WET FLOOR, THINK "ZAP"...
ZAP

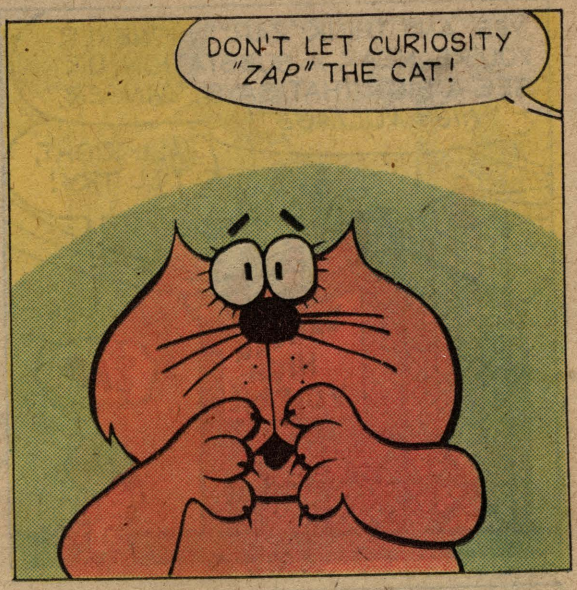

BEFORE YOU TOUCH A SWITCH, OR TRY TO PLUG IN ANYTHING!
YES, I'LL DO THAT!
ZAP

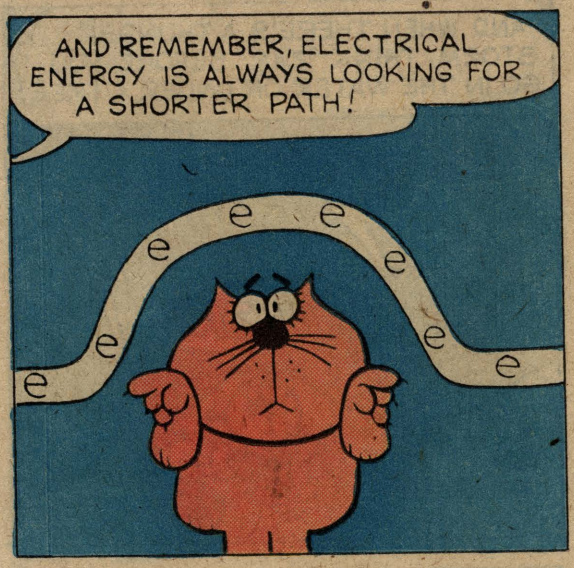

AND WHEN THERE'S A THUNDER-STORM, THINK "ZAP" BEFORE YOU GO IN THE WATER OR UNDER A TREE!
ZAP

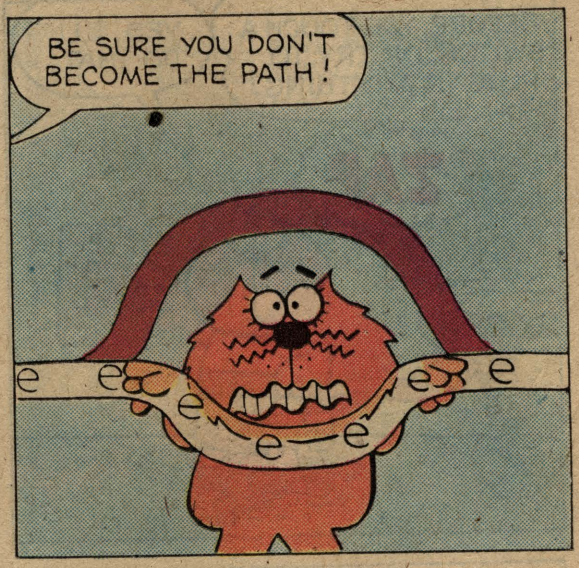

AND WHENEVER YOU'RE AROUND ANYTHING ELECTRICAL THAT LOOKS DAMAGED OR THAT YOU DON'T UNDERSTAND, THINK "ZAP" BEFORE YOU TOUCH IT!
ZAP

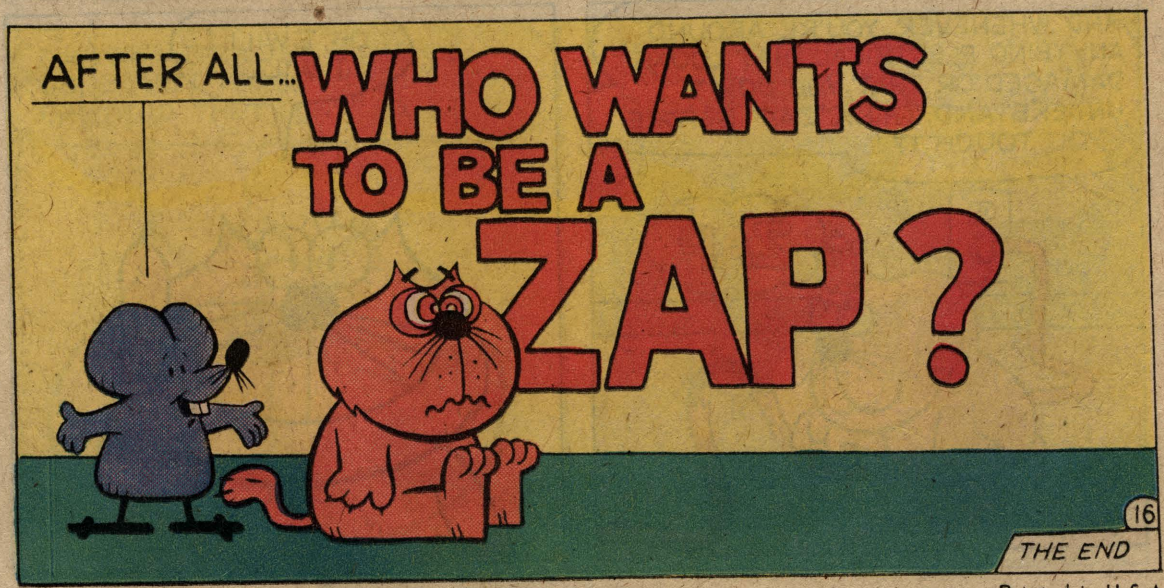
OH, I WILL! I WILL!











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